#### Small Business Innovation Research/Small Business Tech Transfer

# Advanced Microgravity Compatible, Integrated Laundry System, Phase II



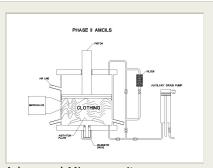
Completed Technology Project (2013 - 2017)

#### **Project Introduction**

An Advanced Microgravity Compatible, Integrated laundry System (AMCILS) is proposed that uses a two phase water / water vapor system to allow good agitation of clothing during the wash & rinse cycle. Drying will be accomplished utilizing microwave energy addition and "jet" air flow to fluff and move clothing in the washing chamber. Operation in a two phase water / water vapor system precludes the formation of sustainable foam in the wash effluent while allowing adequate volume for agitation of clothing in a weightless environment while using a minimum amount of water. Drying using air "jets" and microwave addition was proven during micro-gravity testing performed in the Single Phase Space Laundry Phase II program (NASA contract No. NAS9-18362, Jan. 1993) The Phase II effort will build upon the successful Phase I feasibility demonstration of the AMCIL concept and result in delivery of a working AMCIL prototype whose performance will be thoroughly characterized and delivered to NASA for independent testing. The AMCIL promises a reduction in ESM associated with crew clothing on long duration missions through the reduction of expendables. Clothing can be re-used which minimizes ESM associated with storage of new clothing, and waste storage associated with used clothing.

### **Primary U.S. Work Locations and Key Partners**





Advanced Microgravity Compatible, Integrated Laundry System, Phase II

#### **Table of Contents**

Project Introduction	1
Primary U.S. Work Locations	
and Key Partners	1
Project Transitions	2
Images	2
Organizational Responsibility	2
Project Management	2
Technology Maturity (TRL)	3
Technology Areas	3
Target Destinations	3



#### Small Business Innovation Research/Small Business Tech Transfer

# Advanced Microgravity Compatible, Integrated Laundry System, Phase II



Completed Technology Project (2013 - 2017)

Organizations Performing Work	Role	Туре	Location
UMPQUA Research	Lead	Industry	Myrtle Creek,
Company	Organization		Oregon
• Ames Research Center(ARC)	Supporting	NASA	Moffett Field,
	Organization	Center	California

Primary U.S. Work Locations	
California	Oregon

#### **Project Transitions**



July 2013: Project Start



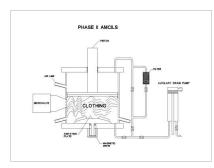
February 2017: Closed out

**Closeout Summary:** Advanced Microgravity Compatible, Integrated Laundry Sy stem, Phase II Project Image

#### **Closeout Documentation:**

• Final Summary Chart Image(https://techport.nasa.gov/file/137332)

#### **Images**



## Final Summary Chart Image

Advanced Microgravity Compatible, Integrated Laundry System, Phase II Project Image (https://techport.nasa.gov/image/)

# Organizational Responsibility

#### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

#### **Lead Organization:**

UMPQUA Research Company

#### **Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

### **Project Management**

#### **Program Director:**

Jason L Kessler

### Program Manager:

Carlos Torrez

#### **Principal Investigator:**

William F Michalek

#### **Co-Investigator:**

William Michalek

#### **Briefing Chart Image**

Advanced Microgravity Compatible, Integrated Laundry System, Phase II

(https://techport.nasa.gov/imag e/127469)

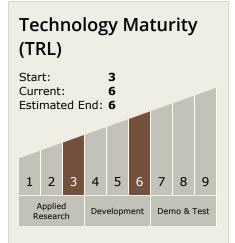


Small Business Innovation Research/Small Business Tech Transfer

# Advanced Microgravity Compatible, Integrated Laundry System, Phase II



Completed Technology Project (2013 - 2017)



## **Technology Areas**

#### **Primary:**

- TX06 Human Health, Life Support, and Habitation Systems
  - — TX06.1 Environmental Control & Life Support Systems (ECLSS) and Habitation Systems — TX06.1.3 Waste Management

## **Target Destinations**

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System

